

Review of: "Synthesis of Nickel Nanoparticles Using Ionic Liquid-Based Extract from *Amaranthus viridis* and Their Antibacterial Activity"

Heba Alshater¹

¹ Scientific Research Group in Egypt, Giza, Egypt

Potential competing interests: No potential competing interests to declare.

Date: 27/9/2024

Title: Synthesis of Nickel Nanoparticles Using Ionic Liquid-Based Extract from *Amaranthus viridis* and Their Antibacterial Activity.

Dear Editor,

In this manuscript, the authors extracted the bioactive components of *Amaranthus viridis* using 1-ethyl-3-methyl imidazolium acetate [C3MIM] Ac and a microwave. The plant extract was used to synthesize nickel nanoparticles (NiNPs), and then characterization of the nanoparticles was made by different analyses.

The manuscript is recommended to be accepted after minor revision.

Comments for authors: All corrections are highlighted in the PDF file

- 1. The abstract:** It includes the methodologies employed for characterization, the manufacture of nickel nanoparticles (Ni NPs), and the extraction of bioactive components from *Amaranthus viridis*, and is given in the study's abstract. It could be enhanced, though, if the following components were added: 1-Results: No information is provided about the specific antibacterial activity of the produced nickel nanoparticles, including the size of the inhibition zones or how well they work against certain bacteria. 2-Conclusions: To improve the abstract, include a brief synopsis of the research's significance, consequences, and relationship to antibiotic resistance, as well as any possible medical uses.
- 2. The introduction:** It includes the background and importance of the work on nickel nanoparticles made from *Amaranthus viridis*, which are described in the publication's introduction. That might be improved, though, if the following were added: 1-Background on Nickel Nanoparticles: A clearer justification for the study might be provided by a more thorough discussion of the characteristics and uses of nickel nanoparticles in a variety of domains, such as electronics, medicine, and catalysis. 2-Literature Review: To place the current study within the body of existing knowledge, a quick summary of prior studies on the synthesis of nanoparticles, particularly with regard to the use of plant extracts or ionic liquids, is helpful.
- 3. Material and methods:** Add a reference to the part of synthesis and antibacterial activity, correct *Staphylococcus*

aureus to *Staphylococcus aureus*, and correct $\text{Ni}(\text{NO}_3)_2$ to $\text{Ni}(\text{NO}_3)_2$.

4. **Results and Discussion:** The study's "Results and Discussion" section provides information on the creation, properties, and antibacterial activity of nickel nanoparticles (Ni NPs). It could be enhanced, though, if the following components were added: 1-Exact measurements of antibacterial activity, such as inhibition zone diameters, concentrations of nanoparticles, and statistical analyses, would improve the clarity and significance of the results, even though the section may already present some results. 2-Comparison with Previous Research: To put the findings in context and show their importance in the larger field, a comparison between the results and earlier research on nickel nanoparticles or other antibacterial agents would be helpful. 3-Mechanism of Action: Talking about the ways that the artificially created Ni NPs work.
5. **English** editing is recommended.
6. Authors should add authors' sharing role declaration.